PU-8H8CTXIR

8-Way HDMI HDBaseT™ Transmitter with 8x8 IR Matrix (inc. POE)

OPERATION MANUAL

DISCLAIMERS

The information in this manual has been carefully checked and is believed to be accurate. Cypress Technology assumes no responsibility for any infringements of patents or other rights of third parties which may result from its use.

Cypress Technology assumes no responsibility for any inaccuracies that may be contained in this document. Cypress also makes no commitment to update or to keep current the information contained in this document.

Cypress Technology reserves the right to make improvements to this document and/or product at any time and without notice.

COPYRIGHT NOTICE

No part of this document may be reproduced, transmitted, transcribed, stored in a retrieval system, or any of its part translated into any language or computer file, in any form or by any means—electronic, mechanical, magnetic, optical, chemical, manual, or otherwise—without express written permission and consent from Cypress Technology.

© Copyright 2011 by Cypress Technology.

All Rights Reserved.

Version 1.0 September 2011

TRADEMARK ACKNOWLEDGMENTS

All products or service names mentioned in this document may be trademarks of the companies with which they are associated.

SAFETY PRECAUTIONS

Please read all instructions before attempting to unpack, install or operate this equipment and before connecting the power supply.

Please keep the following in mind as you unpack and install this equipment:

- Always follow basic safety precautions to reduce the risk of fire, electrical shock and injury to persons.
- To prevent fire or shock hazard, do not expose the unit to rain, moisture or install this product near water.
- Never spill liquid of any kind on or into this product.
- Never push an object of any kind into this product through any openings or empty slots in the unit, as you may damage parts inside the unit.
- Do not attach the power supply cabling to building surfaces.
- Use only the supplied power supply unit (PSU). Do not use the PSU if it is damaged.
- Do not allow anything to rest on the power cabling or allow any weight to be placed upon it or any person walk on it.
- To protect the unit from overheating, do not block any vents or openings in the unit housing that provide ventilation and allow for sufficient space for air to circulate around the unit.

REVISION HISTORY

VERSION NO.	DATE	SUMMARY OF CHANGE
RDV1	11/11/2011	PreliMINary Release

CONTENTS

1. Introduction **1**

2. Applications **1**

3. Package Contents **1**

4. System Requirements **1**

5. Features **2**

6. Operation Controls and Functions **3**

6.1 Transmitter's Front Panel 3

6.2 Transmitter's Rear Panel 4

7. Remote Control **5**

8. IR Pin Assignment **7**

9. RS-232 Protocols **8**

9.1Pin Assignment 8

9.2 RS-232 Commands 9

10. Specifications **11**

11. Connection and Installation **12**

12. Acronyms **14**

1. INTRODUCTION

The HDMI over CAT6 transmitter with IR Matrix is an outstanding device for extending and controlling your HDMI signal. With 8 HDMI input ports and 8 CAT6 output ports this device allows a great amount of sources and display to be controlled and display up to 100 meters away. Moreover, with control systems such as IR, RS-232 and remote control these easy users with all kinds of control habit and occasion. Further, the IR matrix makes the distance control over both source and display even more freely and easily.

2. APPLICATIONS

- Commercial advertising and displaying
- Lecture room display and control
- Hyper market demonstration and control

3. PACKAGE CONTENTS

- HDMI over CAT6 with 8 x 8 IR Matrix
- Receiver for HDMI Over CAT6 x 8 (Optional)
- IR Extender x 9
- IR Blaster x 9
- 24V/6.25A DC adaptor x 1
- 5V/6A DC adaptor x 1
- Remote control x 1
- Operation manual

4. SYSTEM REQUIREMENTS

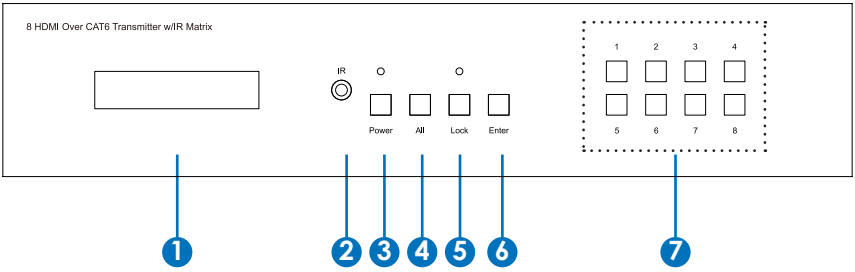
- Input source equipments with HDMI connection cables
- Industry CAT5e/6/7 cable.
- Output display or audio receiver equipments with HDMI connection cables.

5. FEATURES

- HDMI, HDCP1.1 and DVI compliant
- Supports HDMI v1.4 features:
- 3D
- Supports Stereo audio input and output, analog and digital audio signal
- Supports high bit rate audio up to 192kHz
- Supports resolutions to VGA ~ WUXGA and 480i~1080p follow by output display's EDID
- Supports extension up to 80 meters through CAT5e or 100 meters through CAT6/7
- Supports 3D signal display follow by display TV's EDID
- Supports HDMI input up to 15 meters with 8bits resolution or 10 meters with 12bits resolution
- Supports IR in/out from input and output side
- Supports RS-232, remote control and on panel control
- 2U size design

6. OPERATION CONTROLS AND FUNCTIONS

6.1 Transmitter's Front Panel



1 LCM:

This monitor displays your setting information of each IR's input and output selection.

2 IR:

This IR window accepts the remote control signal of this device and all the source and display equipment's IR signal.

3 Power button and LED:

Press this button to turn on the device or press it again to set it to standby mode. The LED will illuminate in green when the power is on and in red when in standby mode.

4 All:

Press this button to select all IR output with one IR input signal. The sequence should be pressing ALL → Number Key → ENTER.

5 LOCK button and LED:

Press this button to lock all the buttons on the panel and the green LED will illuminate. To unlock press it again.

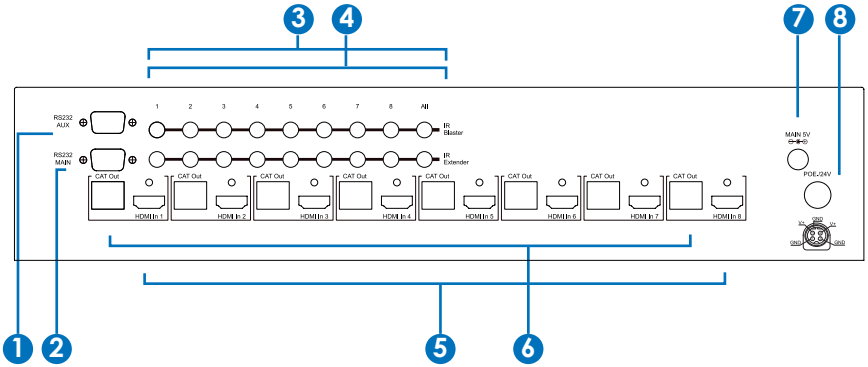
6 ENTER:

Press this button every time after the setting or the selection is made.

7 Selection 1~8:

When selecting IR input with IR output press Number Key first (for output selection) and then press the Number Key again (for input selection).

6.2 Transmitter's Rear Panel



1 RS-232 AUX:

This slot is to connect with D-Sub 9pin cable from the third device for RS-232 signal sending and controlling.

2 RS-232 MAIN:

This slot is to connect with D-Sub 9pin cable from PC/NB for RS-232 signal sending to the device and the third device.

3 IR Blaster 1~All:

These slots are to connect with IR blaster cables included in the package for IR signal sending.

4 IR Extender 1~All:

These slots are to connect with IR extender cables included in the package for IR signal receiving.

5 HDMI IN 1~8:

These slots are to connect with input source equipment such as DVD player or Set-Up-Box with HDMI cable or DVI to HDMI converter cable for input signal sending.

6 CAT:

These slots are to connect with CAT5e/6/7 cable from the Receiver HDMI Over CAT6 side.

7 MAIN 5V:

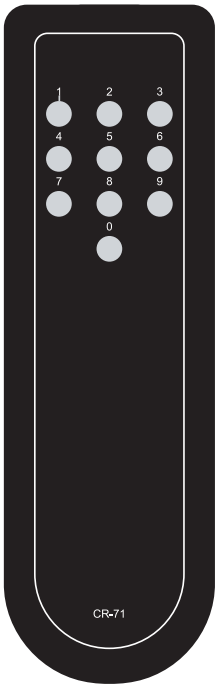
This slot is to plug the power adaptor included in the package and then connect to the AC wall outlet for power supply.

8 POE / 24V:

This slot is where user connect the 24V DC power adaptor and plug the adaptor to an AC wall outlet for power supply when the CAT 6 out are not connected with power supply.

7. REMOTE CONTROL

This remote control can be set with multipal format according to the dipswitch setting. There are total of four dipswitches with mainly two kinds of settings. When dipswitches are all set to ON/↑ the remote control is able to control all outputs and all inputs. For example, when output A wish to select input 5. Press 1 first and wait for a second then press 5, the output display A will display input source 5's image instantly. Other settings referring to IR Dip Switch Position with Output Selection. For example, when all dipswitches are set to OFF/↓ this setting is base on output A and therefore, it can only control inputs selection. Hence, when output A wish to selelct input 3 press 3 only will switch output display A to display input source 3's contents.7.1 RS-232 Protocols



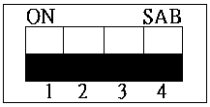
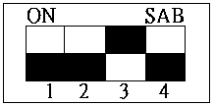
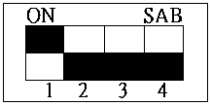
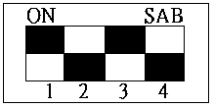
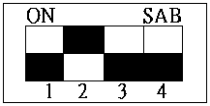
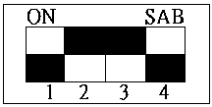
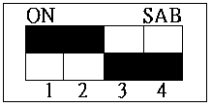
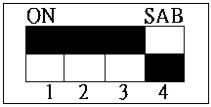
IR Custom Code

NO.	DATA
1	88
2	89
3	8A
4	8C
5	8D
6	8E
7	90
8	91
9	92
0	95

Discrete IR codes for 8x8 IR matrix (IR3)

Select / Dipswitch	input 1	input 2	input 3	input 4	input 5	input 6	input 7	input 8
output A ↓↓↓↓	0cx88	0x89	0x8A	0x8C	0x8D	0x8E	0x90	0x91
output B ↑↓↓↓	0x88	0x89	0x8A	0x8C	0x8D	0x8E	0x90	0x91
output C ↓↑↓↓	0x88	0x89	0x8A	0x8C	0x8D	0x8E	0x90	0x91
output D ↑↑↓↓	0x88	0x89	0x8A	0x8C	0x8D	0x8E	0x90	0x91
output E ↓↓↑↓	0x88	0x89	0x8A	0x8C	0x8D	0x8E	0x90	0x91
output F ↑↓↑↓	0x88	0x89	0x8A	0x8C	0x8D	0x8E	0x90	0x91
output G ↓↑↑↓	0x88	0x89	0x8A	0x8C	0x8D	0x8E	0x90	0x91
output H ↑↑↑↓	0x88	0x89	0x8A	0x8C	0x8D	0x8E	0x90	0x91

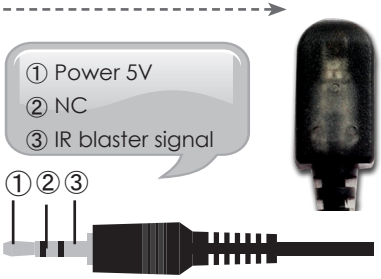
IR Dip Switch Position with Output Selection

	OUTA select		OUTE select
	OUTB select		OUTF select
	OUTC select		OUTG select
	OUTD select		OUTH select

8. IR PIN ASSIGNMENT

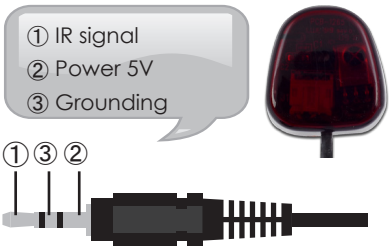
IR Blaster

IR Blaster



IR Extender

IR Receiver



IR Function

OUT(TV)	A	B	C	D	E	F	G	H	ALL
IN(DVD)	1	2	3	4	5	6	7	8	

	A	B	C	D	E	F	G	H	
DVD1 有信號時	O	X	X	X	X	X	X	X	
DVD2 有信號時	X	O	X	X	X	X	X	X	
DVD3 有信號時	X	X	O	X	X	X	X	X	
DVD4 有信號時	X	X	X	O	X	X	X	X	
DVD5 有信號時	X	X	X	X	O	X	X	X	
DVD6 有信號時	X	X	X	X	X	O	X	X	
DVD7 有信號時	X	X	X	X	X	X	O	X	
DVD8 有信號時	X	X	X	X	X	X	X	O	
DVD ALL 有信號時	O	O	O	O	O	O	O	O	

	1	2	3	4	5	6	7	8	ALL
TVA 有信號時	O	X	X	X	X	X	X	X	O
TVB 有信號時	X	O	X	X	X	X	X	X	O
TVC 有信號時	X	X	O	X	X	X	X	X	O
TVD 有信號時	X	X	X	O	X	X	X	X	O
TVE 有信號時	X	X	X	X	O	X	X	X	O
TVF 有信號時	X	X	X	X	X	O	X	X	O
TVG 有信號時	X	X	X	X	X	X	O	X	O
TVH 有信號時	X	X	X	X	X	X	X	O	O

9. RS-232 PROTOCOLS

9.1Pin Assignment

CSI-8H8CV2IR			Remote Control Console	
PIN	Assignment		PIN	Assignment
1	NC		1	NC
2	TX		2	RX
3	RX	→	3	TX
4	NC		4	NC
5	GND	←	5	GND
6	NC		6	NC
7	NC		7	NC
8	NC		8	NC
9	NC		9	NC

Baud Rate: 9600bps

Data bit: 8 bits

Parity: None

Flow Control: None

9.2 RS-232 Commands

COMMAND	ACTION	COMMAND	ACTION
POWER 00	Power Off (standby)		
POWER 01	Power On		
PORT 11	OUTPUT A SELECT INPUT1	PORT 21	OUTPUT B SELECT INPUT1
PORT 12	OUTPUT A SELECT INPUT2	PORT 22	OUTPUT B SELECT INPUT2
PORT 13	OUTPUT A SELECT INPUT3	PORT 23	OUTPUT B SELECT INPUT3
PORT 14	OUTPUT A SELECT INPUT4	PORT 24	OUTPUT B SELECT INPUT4
PORT 15	OUTPUT A SELECT INPUT5	PORT 25	OUTPUT B SELECT INPUT5
PORT 16	OUTPUT A SELECT INPUT6	PORT 26	OUTPUT B SELECT INPUT6
PORT 17	OUTPUT A SELECT INPUT7	PORT 27	OUTPUT B SELECT INPUT7
PORT 18	OUTPUT A SELECT INPUT8	PORT 28	OUTPUT B SELECT INPUT8
PORT 31	OUTPUT C SELECT INPUT1	PORT 41	OUTPUT D SELECT INPUT1
PORT 32	OUTPUT C SELECT INPUT2	PORT 42	OUTPUT D SELECT INPUT2
PORT 33	OUTPUT C SELECT INPUT3	PORT 43	OUTPUT D SELECT INPUT3

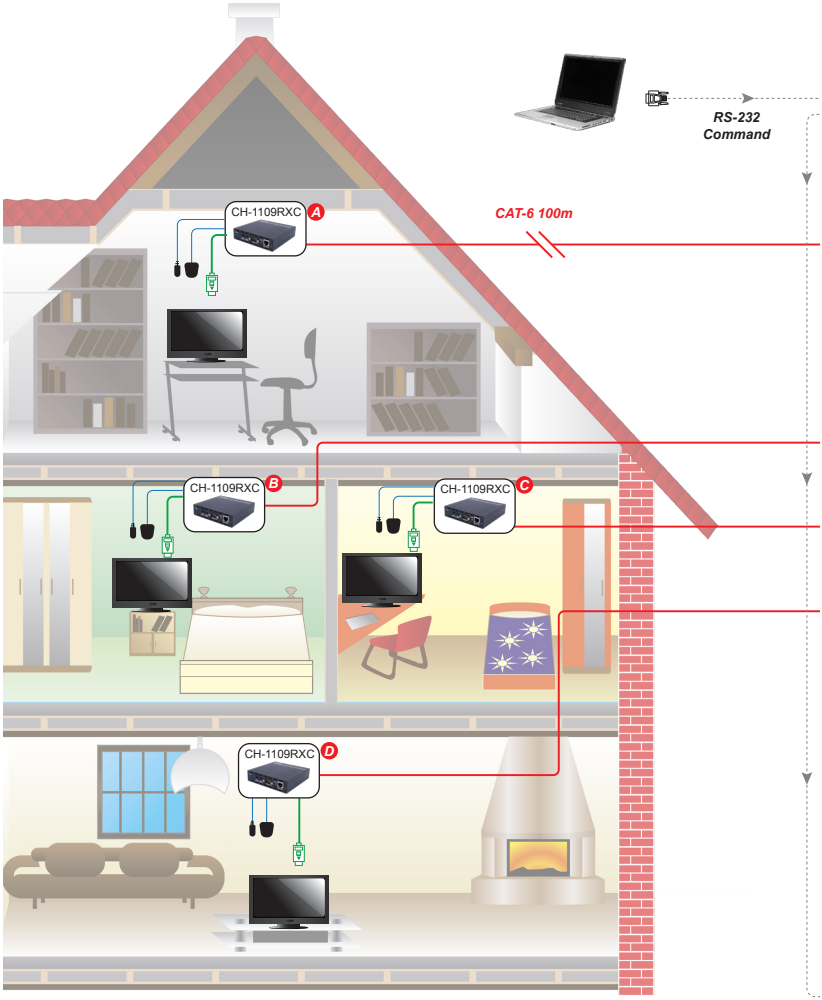
PORT 34	OUTPUT C SELECT INPUT4	PORT 44	OUTPUT D SELECT INPUT4
PORT 35	OUTPUT C SELECT INPUT5	PORT 45	OUTPUT D SELECT INPUT5
PORT 36	OUTPUT C SELECT INPUT6	PORT 46	OUTPUT D SELECT INPUT6
PORT 37	OUTPUT C SELECT INPUT7	PORT 47	OUTPUT D SELECT INPUT7
PORT 38	OUTPUT C SELECT INPUT8	PORT 48	OUTPUT D SELECT INPUT8
PORT 51	OUTPUT E SELECT INPUT1	PORT 61	OUTPUT F SELECT INPUT1
PORT 52	OUTPUT E SELECT INPUT2	PORT 62	OUTPUT F SELECT INPUT2
PORT 53	OUTPUT E SELECT INPUT3	PORT 63	OUTPUT F SELECT INPUT3
PORT 54	OUTPUT E SELECT INPUT4	PORT 54	OUTPUT F SELECT INPUT4
PORT 55	OUTPUT E SELECT INPUT5	PORT 65	OUTPUT F SELECT INPUT5
PORT 56	OUTPUT E SELECT INPUT6	PORT 66	OUTPUT F SELECT INPUT6
PORT 57	OUTPUT E SELECT INPUT7	PORT 67	OUTPUT F SELECT INPUT7
PORT 58	OUTPUT E SELECT INPUT8	PORT 68	OUTPUT F SELECT INPUT8
PORT 71	OUTPUT G SELECT INPUT1	PORT 81	OUTPUT H SELECT INPUT1
PORT 72	OUTPUT G SELECT INPUT2	PORT 82	OUTPUT H SELECT INPUT2
PORT 73	OUTPUT G SELECT INPUT3	PORT 83	OUTPUT H SELECT INPUT3
PORT 74	OUTPUT G SELECT INPUT4	PORT 84	OUTPUT H SELECT INPUT4
PORT 75	OUTPUT G SELECT INPUT5	PORT 85	OUTPUT H SELECT INPUT5

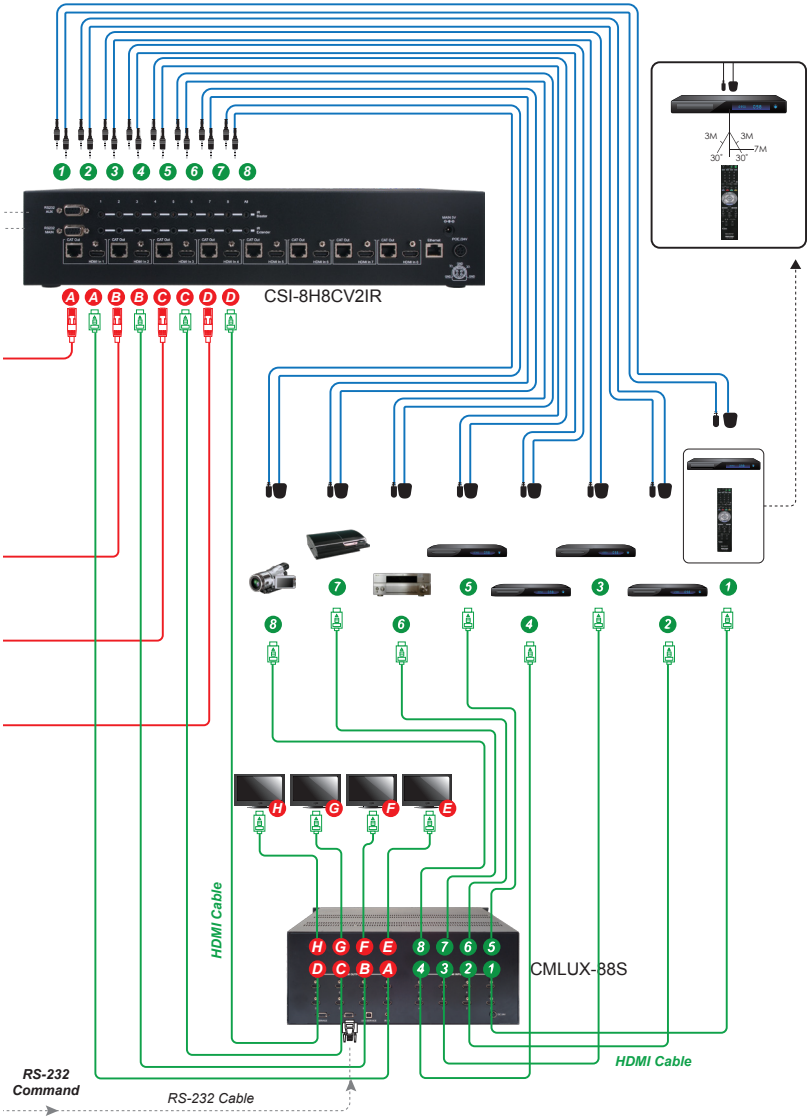
PORT 76	OUTPUT G SELECT INPUT6	PORT 86	OUTPUT H SELECT INPUT6
PORT 77	OUTPUT G SELECT INPUT7	PORT 87	OUTPUT H SELECT INPUT7
PORT 78	OUTPUT G SELECT INPUT8	PORT 88	OUTPUT H SELECT INPUT8

10. SPECIFICATIONS

Maximum Data Rate	6.75 Gbps (2.25 Gbps per clock)
Maximum Pixel Rate	225 MHz
Transmitter	
Input Ports	8 x HDMI, 9 x IR Extender, 1 x RS-232, 1 x WAN (RJ-45)
Output Ports	8 x CAT5e/6/7, 9 x IR Blaster, 1 x RS-232
Input / Output Resolution	VGA~WUXGA, 480i~1080p
ESD Protection	Human body model: ± 8kV (Air-gap discharge) ± 4kV (Contact discharge)
Power Supply	24V/6.25A DC (US/EU standards, CE/FCC/UL certified) 5V/6A DC (US/EU standards, CE/FCC/UL certified)
Dimensions (mm)	482(W) X 362.5(D) X 176(H)
Weight(g)	2100
Chassis Material	METAL
Silkscreen Color	BLACK
OPERATING TEMPERATURE	0°C ~ 40°C / 32°F ~ 104°F
STORAGE TEMPERATURE	-20°C ~ 60°C / -4°F ~ 140°F
RELATIVE HUMIDITY	20 ~ 90% RH (NON-CONDENSING)
POWER CONSUMPTION(W)	90 (INCLUDE RX)

11. CONNECTION AND INSTALLATION




1 2 3 4 5 6 7 8
CSI-8H8CV2IR
A A B B C C D D
3M
3M
7M
30°
30°
7 5 3 1
8 6 4 2
H G F E
HDMI Cable
H G F E 8 7 6 5
D C B A 4 3 2 1
CMLUX-88S
HDMI Cable
RS-232 Command
RS-232 Cable

12. ACRONYMS

ACRONYM	COMPLETE TERM
DTS	Digital Theater System
DVI	Digital Visual Interface
EDID	Extended Display Identification Data
HDCP	High-bandwidth Digital Content Protection
HDMI	High-Definition Multimedia Interface
HDTV	High-Definition Television
LCM	Liquid Crystal Monitor
USB	Universal Serial Bus
UXGA	Ultra Extended Graphics Array
VGA	Video Graphics Array

www.cypeurope.com